BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

L Number	Hits	Search Text	DB	Time stamp
1	631	tuber and starch and (isolating isolate isolated)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 09:20
2	5	(tuber and starch and (isolating isolate isolated)) AND HYDROCYCLONE	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 10:24
3	113	amylopectin and (tuber and starch and (isolating isolate isolated))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 09:26
4	3	"5824798" and pure	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 10:25
5	65	(amylopectin and (tuber and starch and (isolating isolate isolated))) and (pure purity)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 10:26
6	16	((amylopectin and (tuber and starch and (isolating isolate isolated))) and (pure purity)) and (seperate seperator centrifuge)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 10:26
7	20	((amylopectin and (tuber and starch and (isolating isolate isolated))) and (pure purity)) and (sieve sieving)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 11:31
8	337	amylopectin and "98" and pure	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 11:32
9	0	(amylopectin and "98" and pure) and centrifure	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 11:32
10	49	(amylopectin and "98" and pure) and centrifuge	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 11:32
11	17	((amylopectin and "98" and pure) and centrifuge) and wash	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 11:42
12	0	nl97/00285	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 11:43
13	0	nl97/00285.pct.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 11:43

14	1	$nl97/00285$	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 12:51
15	16712	mill and starch	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 12:59
16	372	(mill and starch) and tuber	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 12:59
17	0	((mill and starch) and tuber) and grate	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 13:00
18	133	(tuber and starch and (isolating isolate isolated)) and mill	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 13:01
19	59	((tuber and starch and (isolating isolate isolated)) and mill) and vacuum	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 13:03
20	0	(((tuber and starch and (isolating isolate isolated)) and mill) and vacuum) and grate	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 13:03
21	0	(((tuber and starch and (isolating isolate isolated)) and mill) and vacuum) and grating	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 13:03
22	0	(((tuber and starch and (isolating isolate isolated)) and mill) and vacuum) and grated	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 13:41
23	66	tuber and (starch same isolate)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 13:42
24	1792	drying adj tower	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 13:44
25	298	(drying adj tower) and starch	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 13:44
26	0	((drying adj tower) and starch) and (tuber and (starch same isolate))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 13:44
27	20	((drying adj tower) and starch) and amylopectin	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 14:16

28	1	3890888.pn. and (dry dryed drying)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 14:25
29	1	3890888.pn. and grinding	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 15:23
30	29	pure adj amylopectin	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/29 15:23

L8 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2002 ACS
AB Bacterial **isolates** from Tapioca cultivar soil were systematically identified. The effect of culture conditions and medium components on the prodn. of extracellular amylase and pullulanase by Micrococcus halobius OR-1 were investigated. Amylase and pullulanase activity in the cell-free supernatant reached a max. of 8.6 U/mL and 4.8 U/mL after 48 h, resp. The enzyme converted the complex polysaccharides **starch**, dextrin, pullulan, amylose and **amylopectin** predominantly into maltotriose. Saccharification of 15% cereal, **tuber starches** and root **starches** with the whole cultured cells (WCC) or cell-free supernatant (CFS) showed comparable and complete saccharification within 90 min. These saccharifying enzymes had a pH optimum of 8.0 and were stable over a broad pH range of 6-12. Thus the coexpressed physicochem. compatible extracellular amylase and pullulanase produced by the Micrococcus halobius OR-1 strain might have important value in the enzyme-based **starch** saccharification industry.

L8 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2002 ACS
AB The major isoform of **starch** synthase from the sol. fraction of developing potato **tubers** has been purified and used to prep. an antibody and **isolate** a cDNA. The protein is 140 kD, and it is distinctly different in predicted primary amino acid sequence from other isoforms of the enzyme thus far described. Immunoinhibition and immunoblotting expts. and anal. of **tubers** in which activity of the isoform was reduced through expression of antisense mRNA revealed that the isoform accounts for .apprx.80% of the activity in the sol. fraction of the **tuber** and that it is also bound to **starch** granules. Severe redns. in activity had no discernible effect on **starch** content or amylose-to-**amylopectin** ratio of **starch** in **tubers**. However, they caused a profound change in the morphol. of **starch** granules, indicative of important underlying changes in the structure of **starch** polymers within the granule.

L8 ANSWER 3 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AB Bacterial **isolates** from Tapioca cultivar soil were systematically identified. The effect of culture conditions and medium components on the production of extracellular amylase and pullulanase by Micrococcus halobius OR-1 were investigated. Amylase and pullulanase activity in the cell-free supernatant reached a maximum of 8.6 U/ml and 4.8 U/ml after 48 h, respectively. The enzyme converted the complex polysaccharides **starch**, dextrin, pullulan, amylose and **amylopectin** predominantly into maltotriose. Saccharification of 15% cereal, **tuber starches** and root **starches** with the whole cultured cells (WCC) or cell-free supernatant (CFS) showed comparable and complete saccharification within 90 min. These saccharifying enzymes had a pH optimum of 8.0 and were stable over a broad pH range of 6-12. Thus the coexpressed physicochemically compatible extracellular amylase and pullulanase produced by the Micrococcus halobius OR-1 strain might have important value in the enzyme-based **starch** saccharification industry.

L8 ANSWER 4 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AB The major isoform of **starch** synthase from the soluble fraction of developing potato **tubers** has been purified and used to prepare an antibody and **isolate** a cDNA. The protein is 140 ko,

and it is distinctly different in predicted primary amino acid sequence from other isoforms of the enzyme thus far described. Immunoinhibition and immunoblotting experiments and analysis of **tubers** in which activity of the isoform was reduced through expression of antisense mRNA revealed that the isoform accounts for apprx 80% of the activity in the soluble fraction of the **tuber** and that it is also bound to **starch** granules. Severe reductions in activity had no discernible effect on **starch** content or amylose-to-**amylopectin** ratio of **starch** in **tubers**. However, they caused a profound change in the morphology of **starch** granules, indicative of important underlying changes in the structure of **starch** polymers within the granule.

L8 ANSWER 5 OF 5 MEDLINE

AB The major isoform of **starch** synthase from the soluble fraction of developing potato **tubers** has been purified and used to prepare an antibody and **isolate** a cDNA. The protein is 140 kD, and it is distinctly different in predicted primary amino acid sequence from other isoforms of the enzyme thus far described. Immunoinhibition and immunoblotting experiments and analysis of **tubers** in which activity of the isoform was reduced through expression of antisense mRNA revealed that the isoform accounts for approximately 80% of the activity in the soluble fraction of the **tuber** and that it is also bound to **starch** granules. Severe reductions in activity had no discernible effect on **starch** content or amylose-to-**amylopectin** ratio of **starch** in **tubers**. However, they caused a profound change in the morphology of **starch** granules, indicative of important underlying changes in the structure of **starch** polymers within the granule.

=> d 1-5 ti ab kwic

L8 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2002 ACS

TI Co-expression of saccharifying alkaline amylase and pullulanase in Micrococcus halobius OR-1 isolated from tapioca cultivar soil

AB Bacterial **isolates** from Tapioca cultivar soil were systematically identified. The effect of culture conditions and medium components on the prodn. of extracellular amylase and pullulanase by Micrococcus halobius OR-1 were investigated. Amylase and pullulanase activity in the cell-free supernatant reached a max. of 8.6 U/mL and 4.8 U/mL after 48 h, resp. The enzyme converted the complex polysaccharides **starch**, dextrin, pullulan, amylose and **amylopectin** predominantly into maltotriose. Saccharification of 15% cereal, **tuber starches** and root **starches** with the whole cultured cells (WCC) or cell-free supernatant (CFS) showed comparable and complete saccharification within 90 min. These saccharifying enzymes had a pH optimum of 8.0 and were stable over a broad pH range of 6-12. Thus the coexpressed physicochem. compatible extracellular amylase and pullulanase produced by the Micrococcus halobius OR-1 strain might have important value in the enzyme-based **starch** saccharification industry.

AB Bacterial **isolates** from Tapioca cultivar soil were systematically identified. The effect of culture conditions and medium components on the prodn. of extracellular. . . supernatant reached a max. of 8.6 U/mL and 4.8 U/mL after 48 h, resp. The enzyme converted the complex polysaccharides **starch**, dextrin, pullulan, amylose and **amylopectin** predominantly into maltotriose. Saccharification of 15% cereal, **tuber starches** and root **starches**

with the whole cultured cells (WCC) or cell-free supernatant (CFS) showed comparable and complete saccharification within 90 min. These saccharifying. . . physicochem. compatible extracellular amylase and pullulanase produced by the Micrococcus halobius OR-1 strain might have important value in the enzyme-based **starch** saccharification industry.

ST Micrococcus alk amylase pullulanase **starch** saccharification

IT 9005-25-8, **Starch**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(co-expression of saccharifying alk. amylase and pullulanase in Micrococcus halobius OR-1 isolated from tapioca cultivar soil)

L8 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2002 ACS

TI Identification of the major **starch** synthase in the soluble fraction of potato **tubers**

AB The major isoform of **starch** synthase from the sol. fraction of developing potato **tubers** has been purified and used to prep. an antibody and **isolate** a cDNA. The protein is 140 kD, and it is distinctly different in predicted primary amino acid sequence from other isoforms of the enzyme thus far described. Immunoinhibition and immunoblotting expts. and anal. of **tubers** in which activity of the isoform was reduced through expression of antisense mRNA revealed that the isoform accounts for .apprx.80% of the activity in the sol. fraction of the **tuber** and that it is also bound to **starch** granules. Severe redns. in activity had no discernible effect on **starch** content or amylose-to-**amylopectin** ratio of **starch** in **tubers**. However, they caused a profound change in the morphol. of **starch** granules, indicative of important underlying changes in the structure of **starch** polymers within the granule.

TI Identification of the major **starch** synthase in the soluble fraction of potato **tubers**

AB The major isoform of **starch** synthase from the sol. fraction of developing potato **tubers** has been purified and used to prep. an antibody and **isolate** a cDNA. The protein is 140 kD, and it is distinctly different in predicted primary amino acid sequence from other isoforms of the enzyme thus far described. Immunoinhibition and immunoblotting expts. and anal. of **tubers** in which activity of the isoform was reduced through expression of antisense mRNA revealed that the isoform accounts for .apprx.80% of the activity in the sol. fraction of the **tuber** and that it is also bound to **starch** granules. Severe redns. in activity had no discernible effect on **starch** content or amylose-to-**amylopectin** ratio of **starch** in **tubers**. However, they caused a profound change in the morphol. of **starch** granules, indicative of important underlying changes in the structure of **starch** polymers within the granule.

ST potato **tuber starch** synthase sequence

IT Deoxyribonucleic acid sequences
(for major **starch** synthase isoenzyme from potato)

IT Potato
Tuber (plant organ)
(major **starch** synthase in sol. fraction of potato **tubers**)

IT Protein sequences
(of major **starch** synthase isoenzyme from potato)

IT Organelle
(**starch** granule, **starch** synthase isoenzyme redn.

and effect on **starch** granule and amylose-to-**amylopectin** ratio in potato **tubers**)

IT 179734-85-1
RL: PRP (Properties)
(amino acid sequence; major **starch** synthase in sol. fraction of potato **tubers**)

IT 37292-82-3, **Starch** synthase
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(major **starch** synthase in sol. fraction of potato **tubers**)

IT 173758-43-5, GenBank X95759
RL: PRP (Properties)
(nucleotide sequence; major **starch** synthase in sol. fraction of potato **tubers**)

IT 9005-82-7, Amylose 9037-22-3, **Amylopectin**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**starch** synthase isoenzyme redn. and effect on **starch** granule and amylose-to-**amylopectin** ratio in potato **tubers**)

L8 ANSWER 3 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

TI Co-expression of saccharifying alkaline amylase and pullulanase in Micrococcus halobius OR-1 isolated from tapioca cultivar soil.

AB Bacterial **isolates** from Tapioca cultivar soil were systematically identified. The effect of culture conditions and medium components on the production of extracellular amylase and pullulanase by Micrococcus halobius OR-1 were investigated. Amylase and pullulanase activity in the cell-free supernatant reached a maximum of 8.6 U/ml and 4.8 U/ml after 48 h, respectively. The enzyme converted the complex polysaccharides **starch**, dextrin, pullulan, amylose and **amylopectin** predominantly into maltotriose. Saccharification of 15% cereal, **tuber starches** and root **starches** with the whole cultured cells (WCC) or cell-free supernatant (CFS) showed comparable and complete saccharification within 90 min. These saccharifying enzymes had a pH optimum of 8.0 and were stable over a broad pH range of 6-12. Thus the coexpressed physicochemically compatible extracellular amylase and pullulanase produced by the Micrococcus halobius OR-1 strain might have important value in the enzyme-based **starch** saccharification industry.

AB Bacterial **isolates** from Tapioca cultivar soil were systematically identified. The effect of culture conditions and medium components on the production of extracellular. . . supernatant reached a maximum of 8.6 U/ml and 4.8 U/ml after 48 h, respectively. The enzyme converted the complex polysaccharides **starch**, dextrin, pullulan, amylose and **amylopectin** predominantly into maltotriose. Saccharification of 15% cereal, **tuber starches** and root **starches** with the whole cultured cells (WCC) or cell-free supernatant (CFS) showed comparable and complete saccharification within 90 min. These saccharifying. . . physicochemically compatible extracellular amylase and pullulanase produced by the Micrococcus halobius OR-1 strain might have important value in the enzyme-based **starch** saccharification industry.

IT Industry
starch industry

IT Miscellaneous Descriptors
enzyme coexpression; soils; sweeteners: production

L8 ANSWER 4 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
TI Identification of the major **starch** synthase in the soluble fraction of potato **tubers**.
AB The major isoform of **starch** synthase from the soluble fraction of developing potato **tubers** has been purified and used to prepare an antibody and **isolate** a cDNA. The protein is 140 ko, and it is distinctly different in predicted primary amino acid sequence from other isoforms of the enzyme thus far described. Immunoinhibition and immunoblotting experiments and analysis of **tubers** in which activity of the isoform was reduced through expression of antisense mRNA revealed that the isoform accounts for apprx 80% of the activity in the soluble fraction of the **tuber** and that it is also bound to **starch** granules. Severe reductions in activity had no discernible effect on **starch** content or amylose-to-**amylopectin** ratio of **starch** in **tubers**. However, they caused a profound change in the morphology of **starch** granules, indicative of important underlying changes in the structure of **starch** polymers within the granule.
TI Identification of the major **starch** synthase in the soluble fraction of potato **tubers**.
AB The major isoform of **starch** synthase from the soluble fraction of developing potato **tubers** has been purified and used to prepare an antibody and **isolate** a cDNA. The protein is 140 ko, and it is distinctly different in predicted primary amino acid sequence from other isoforms of the enzyme thus far described. Immunoinhibition and immunoblotting experiments and analysis of **tubers** in which activity of the isoform was reduced through expression of antisense mRNA revealed that the isoform accounts for apprx 80% of the activity in the soluble fraction of the **tuber** and that it is also bound to **starch** granules. Severe reductions in activity had no discernible effect on **starch** content or amylose-to-**amylopectin** ratio of **starch** in **tubers**. However, they caused a profound change in the morphology of **starch** granules, indicative of important underlying changes in the structure of **starch** polymers within the granule.
IT Sequence Data
amino acid sequence; molecular sequence data; EMBL-X95759
IT Miscellaneous Descriptors
COMPLEMENTARY DNA; MESSENGER RNA; **STARCH** GRANULE

L8 ANSWER 5 OF 5 MEDLINE
TI Identification of the major **starch** synthase in the soluble fraction of potato **tubers**.
AB The major isoform of **starch** synthase from the soluble fraction of developing potato **tubers** has been purified and used to prepare an antibody and **isolate** a cDNA. The protein is 140 kD, and it is distinctly different in predicted primary amino acid sequence from other isoforms of the enzyme thus far described. Immunoinhibition and immunoblotting experiments and analysis of **tubers** in which activity of the isoform was reduced through expression of antisense mRNA revealed that the isoform accounts for approximately 80% of the activity in the soluble fraction of the **tuber** and that it is also bound to **starch** granules. Severe reductions in activity had no discernible effect on **starch** content or amylose-to-**amylopectin** ratio of **starch** in **tubers**.
However, they caused a profound change in the morphology of **starch** granules, indicative of important underlying changes in the structure of **starch** polymers within the granule.
TI Identification of the major **starch** synthase in the soluble

fraction of potato **tubers**.

AB The major isoform of **starch** synthase from the soluble fraction of developing potato **tubers** has been purified and used to prepare an antibody and **isolate** a cDNA. The protein is 140 kD, and it is distinctly different in predicted primary amino acid sequence from other isoforms of the enzyme thus far described. Immunoinhibition and immunoblotting experiments and analysis of **tubers** in which activity of the isoform was reduced through expression of antisense mRNA revealed that the isoform accounts for approximately 80% of the activity in the soluble fraction of the **tuber** and that it is also bound to **starch** granules. Severe reductions in activity had no discernible effect on **starch** content or amylose-to-**amylopectin** ratio of **starch** in **tubers**. However, they caused a profound change in the morphology of **starch** granules, indicative of important underlying changes in the structure of **starch** polymers within the granule.

CT . . .

ME, metabolism

Recombinant Proteins: CH, chemistry
Recombinant Proteins: IP, isolation & purification
Recombinant Proteins: ME, metabolism
Sequence Homology, Amino Acid
***Starch Synthase: CH, chemistry**
Starch Synthase: IP, isolation & purification
***Starch Synthase: ME, metabolism**

CN 0 (Antibodies); 0 (DNA, Complementary); 0 (RNA, Antisense); 0 (RNA, Messenger); 0 (Recombinant Proteins); EC 2.4.1.21 (**Starch** Synthase)